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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/728,197	12/03/2003	Steven C. Quarre	044182 307083	7284

7590 04/22/2005

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EXAMINER
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ZEC, FILIP

ART UNIT	PAPER NUMBER
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3744

DATE MAILED: 04/22/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

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<b>Office Action Summary</b>	Application No.	Applicant(s)	
	10/728,197	QUARRE, STEVEN C.	
	Examiner	Art Unit	
	Filip Zec	3744	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 03 December 2003.
- 2a) ☐ This action is FINAL.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 December 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Drawings*

1. New corrected drawings in compliance with 37 CFR 1.121(d), are required in this application because FIG.'s 1 and 3 contain handwritten markings, letters and numbers.

Applicant is advised to employ the services of a competent patent draftsman outside the Office, as the U.S. Patent and Trademark Office no longer prepares new drawings. The corrected drawings are required in reply to the Office action to avoid abandonment of the application. The requirement for corrected drawings will not be held in abeyance.

2. The drawings are objected to because FIG. 3 is incomprehensible and does not clarify the invention in any way. Corrected drawing sheets in compliance with 37 CFR 1.121(d), are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet, should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

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3. In addition to Replacement Sheets containing the corrected drawing figure(s), applicant is required to submit a marked-up copy of each Replacement Sheet including annotations indicating the changes made to the previous version. The marked-up copy must be clearly labeled as "Annotated Sheets" and must be presented in the amendment or remarks section that explains the change(s) to the drawings. See 37 CFR 1.121(d)(1). Failure to timely submit the proposed drawing and marked-up copy will result in the abandonment of the application.

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-8, 10-18 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 5,332,031 to Kiga, in view of U.S. Patent 5,724,818 to Iwata et al. Kiga discloses applicant's basic inventive concept, a method and apparatus of cooling a charge-coupled device, said method comprising coupling said charge-coupled device (7, FIG. 1) to a cold side of a thermoelectric cooling device (9), coupling a hot side of said thermoelectric cooling device to a transfer plate (13), coupling said transfer plate to a heat sink (12a, FIG. 2), interposing a spacer (29) between said charge-coupled device and said cold side of said thermoelectric cooling device, selectively dimensioning said spacer to maximize a surface area of contact between said charge-coupled device and said cold side of said thermoelectric cooling device (col 3, lines 48-52), wherein said interposing comprises selectively dimensioning said spacer to position said hot

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side of said thermoelectric cooling device in a predetermined location relative to said charge-coupled device, selectively applying a conformal coating to at least one said transfer plate, said thermal barrier, and an interface between said transfer plate and said thermal barrier (col 3, lines 40-42), said selectively applying comprises providing an environmentally tight moisture barrier with said conformal coating (col 5, lines 40-50), said mounting comprises isolating heat generated by said thermoelectric cooling device from said charge-coupled device, substantially as claimed with the exception of mounting said transfer plate to a thermal barrier. Iwata shows mounting a transfer plate (14, FIG. 1) to a thermal barrier (10, FIG. 1) to be old in the electronics cooling art. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made from the teaching of Iwata to modify the system of Kiga, by mounting said transfer plate to a thermal barrier in order to utilize the ceramic material and improve the heat conduction (col 8, lines 33-35).

6. Claims 9 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 5,332,031 to Kiga, in view of U.S. Patent 5,724,818 to Iwata et al. as applied to claims 1 and 11 above, and further in view of U.S. Patent 4,253,515 to Swiatosz. Kiga in view of Iwata discloses applicant's basic inventive concept, a method and apparatus of cooling a charge-coupled device, substantially as claimed with the exception of using epoxy laminate material to mount said transfer plate. Iwata shows a mounting process using epoxy laminate material (col 4, lines 17-19) to be old in the electronics cooling art. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made from the teaching of Swiatosz to modify the system of Kiga in view of Iwata, by using epoxy laminate material for

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mounting a transfer plate in order to provide optimum insulation and minimum separation between surfaces connected.

***Conclusion***

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

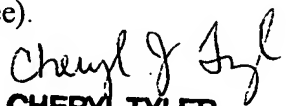
U.S. Patent 4,947,648 to Harwell, Robert W. et al. teaches a thermoelectric refrigeration apparatus.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Filip Zec whose telephone number is (571) 272-4815. The examiner can normally be reached on Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Denise Esquivel can be reached on (571) 272-4808. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Filip Zec  
Examiner  
Art Unit 3744

  
**CHERYL TYLER**  
**SUPERVISORY PATENT EXAMINER**

FZ